
Preface

Approximately five years ago I, along with several colleagues, was testing a subject who had a severe sensorineural hearing loss and who was obtaining less than optimal benefit from conventional binaural amplification. He was a research subject involved in a long-term project looking into whether or not a hearing aid implanted in the middle ear could provide significant benefit relative to the benefit provided by his current hearing aids. Earlier in the week I measured his word recognition ability using the NU-6 word lists and obtained sound quality judgments for speech as the signals were processed through a modified audiometer and finally fed to a pair of insert earphones. On this day, we were repeating the measurements, but now the transducer was a prototype that we were developing as part of a project to create an implantable hearing aid in the middle ear. On this day, Dr. John Fredrickson, the principal investigator of the project, carefully manipulated the thin transducer along the anesthetized ear canal until the tip was on the eardrum at the handle of the malleus. We were pleased when after repeating the measures we found that the subject's word recognition scores improved significantly relative to the same measure performed earlier using a high quality insert earphone. In addition, the subject reported that the processed sound quality through the probe was "clearer" and sounded "more natural" than he had experienced when listening through the insert earphone. It was on that day that I became convinced that implanting a hearing aid in the middle ear might offer significant benefit for hearing impaired patients. Five year later, our team is still perfecting this technology because we are convinced that a hearing aid, implanted directly to the malleus or incus could provide an amplified signal which will result in performance significantly better than is possible with conventional hearing aids.

This issue of *Trends* provides a comprehensive overview of the past, present and future of implantable hearing aids. The overview covers the research and clinical findings on **Bone Anchored Hearing Aids (BAHA)** (transcutaneous and percutaneous) and **Middle Ear Implants (MEI)**.

Marshall Chasin, M.Sc., is a friend who has worn, and continues to wear, many hats. From 1981-1985 he was a clinical audiologist at the Canadian Hearing Society. From 1985 to the present he has perfected his craft in private practice; been a consultant and Director of Auditory Research at the Centre for Human Performance and Health Promotion and coordinated and chaired his annual conference "Seminars in Audition." From 1990 to the present he has been an Assistant Professor at the University of Toronto in the Department of Linguistics. From 1991 to the present he has been an Honorary Lecturer at the University of Western Ontario in the Department of Communicative Disorders. From 1996 to the present he is also an Assistant Professor in Articulatory Phonetics in the Department of Speech-Pathology at the University of Toronto. In addition to all these activities, he has been the author of more than 60 articles, books, book chapters and letters on hearing aids, earmold acoustics, assistive listening devices, musicians and hearing loss and test procedures. Finally, from 1982-1997 he has presented over 160 papers at seminars and technical sessions at national and international meetings.

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